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**EXPIRED PROCEDURE - EXAMINING GROUP 2822**

S/N 09/256,643

*Has Response  
(NE)  
Docket  
PATENT  
5/14/02*

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Leonard Forbes et al. Examiner: Michael Trinh  
Serial No.: 09/256,643 Group Art Unit: 2822  
Filed: February 23, 1999 Docket: 303.324US2  
Title: TRANSISTOR WITH VARIABLE ELECTRON AFFINITY GATE AND  
METHODS OF FABRICATION AND USE

**RESPONSE UNDER 37 C.F.R. § 1.116**

Box AF  
Commissioner for Patents  
Washington, D.C. 20231

*Please enter  
6/14/02*  
In response to the Final Office Action dated 11 March 2002, the applicant respectfully requests reconsideration of the above-identified application in view of the following remarks. Claims 21, 23, 24, 26, 29-33 and 36-75 are pending in the application. Claims 21, 23-24, 26, 29-32, 36-46, 48-59, 60-61, 63-66, 68-69, and 71-74 are rejected, and claims 33, 47, 62, 67, 70, and 75 are objected to. None of the claims have been amended.

*Telephone interview*

The applicant thanks Examiner Trinh for the telephone interview granted on Wednesday 1 May 2002, between himself and the applicant's representative Mr. Mates (Reg. No. 35,271). Examiner Trinh requested a written response to the Final Office Action.

*Allowable Subject Matter*

The Office Action indicated that claims 33, 47, 62, 67, 70, and 75 would be allowable if rewritten in independent form. The applicant reserves the right to rewrite claims 33, 47, 62, 67, 70, and 75 in independent form, but believes that the base claims from which they depend are allowable in view of the remarks made herein.

*Rejections Under 35 USC § 103*

Claims 21, 23-26, 29-32, 36-46, and 48-59 were rejected under 35 USC § 103(a) as being unpatentable over Chamberlain (U.S. Patent No. 4,473,836) taken with Halvis et al. (U.S. Patent No. 5,369,040, Halvis). The applicant respectfully traverses.

The remarks made in response to this rejection filed by the applicant on 21 November 2001 are referred to and incorporated herein, and the following remarks are also made in response to this rejection.

The MPEP states the following with regard to rejections under 35 USC § 103:

“To establish a *prima facie* case of obviousness ... there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings.” MPEP 2143.

A recent Federal Circuit opinion, *In re Sang Su Lee*, 61 USPQ2d 1430 (Fed. Cir. 2002), specifically requires that the suggestion or motivation to combine references “be based on objective evidence of record.” The court also stated that “[t]his factual question of motivation is material to patentability, and could not be resolved on subjective belief and unknown authority.” Another Federal Circuit opinion states that the suggestion or motivation to combine references must be found in the prior art. MPEP 2143 citing *In re Vaeck*, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991).

The Final Office Action stated on page 2 that it would have been obvious “to replace the polysilicon gate of Chamberlain with the gate of silicon carbide .... taught by Halvis .... because of the desirability to improve response, to improve quantum efficiency, and to improve performance and light sensitivity.” The Final Office Action did not cite prior art in the record that supports the above-stated motivation for combining Chamberlain and Halvis. The applicant respectfully submits that there is no evidence of a suggestion in the record for the combination of Chamberlain and Halvis.

The applicant respectfully submits that a *prima facie* case of obviousness of claims 21, 23-26, 29-32, 36-46, and 48-59 has **not** been established in the Final Office Action, and that claims 21, 23-26, 29-32, 36-46, and 48-59 are in condition for allowance.

Claims 21, 23-24, 26, 29-32, 36-46, 48-59, 60-61, 63-66, 68-69, and 71-74 were rejected under 35 USC § 103(a) as being unpatentable over Yamazaki et al. (U.S. Patent No. 5,449,941, Yamazaki) in view of Halvis. The applicant respectfully traverses.

The remarks made in response to this rejection filed by the applicant on 21 November 2001 are referred to and incorporated herein, and the following remarks are also made in response to this rejection.

As stated above, the MPEP and case law require that there be some suggestion or motivation to combine references to reject claims under 35 USC § 103, and the suggestion or motivation must be found in the prior art.

The Final Office Action stated in text bridging pages 3 and 4 that it would have been obvious “to replace the polysilicon gate of Yamazaki with the floating gate of silicon carbide .... taught by Halvis .... because of the desirability to improve response, to improve quantum efficiency, and to improve performance and light sensitivity.” The Final Office Action did not cite prior art in the record that supports the above-stated motivation for combining Yamazaki and Halvis as is required by *In re Sang Su Lee* and *In re Vaeck*. The applicant respectfully submits that there is no evidence of a suggestion in the record for the combination of Yamazaki and Halvis.

The applicant respectfully submits that a *prima facie* case of obviousness of claims 21, 23-24, 26, 29-32, 36-46, 48-59, 60-61, 63-66, 68-69, and 71-74 has not been established in the Final Office Action, and that claims 21, 23-24, 26, 29-32, 36-46, 48-59, 60-61, 63-66, 68-69, and 71-74 are in condition for allowance.

Claims 21, 23-24, 26, 29-32, 36-46, 48-59, 60-61, 63-66, 68-69, and 71-74 were rejected under 35 USC § 103(a) as being unpatentable over Halvis taken with Tohyama (U.S. Patent No. 5,858,811) and Chamberlain. The applicant respectfully traverses.

The remarks made in response to this rejection filed by the applicant on 21 November 2001 are referred to and incorporated herein, and the following remarks are also made in response to this rejection.

As stated above, the MPEP and case law require that there be some suggestion or motivation to combine references to reject claims under 35 USC § 103, and the suggestion or motivation must be found in the prior art.

The Final Office Action stated on page 2 that it would have been obvious "to replace the polysilicon gate of Chamberlain with the gate of silicon carbide .... taught by Halvis .... because of the desirability to improve response, to improve quantum efficiency, and to improve performance and light sensitivity." The Final Office Action also stated on page 5 that it would have been obvious "to remove portions of the insulating layer and the layer of silicon carbide of Halvis in forming the gate as taught by Tohyama, wherein forming diffused regions ... is taught by Chamberlain .... because of the desirability to control the desired thickness of the gate insulating layer..."

The Final Office Action did not cite prior art in the record that supports the above-stated motivations for combining Chamberlain, Halvis, and Tohyama as is required by *In re Sang Su Lee* and *In re Vaeck*. The applicant respectfully submits that there is no evidence of a suggestion in the record for the combination of Chamberlain, Halvis, and Tohyama.

The applicant respectfully submits that a *prima facie* case of obviousness of claims 21, 23-24, 26, 29-32, 36-46, 48-59, 60-61, 63-66, 68-69, and 71-74 has not been established in the Final Office Action, and that claims 21, 23-24, 26, 29-32, 36-46, 48-59, 60-61, 63-66, 68-69, and 71-74 are in condition for allowance.

**RESPONSE UNDER 37 C.F.R. § 1.116 - EXPEDITED PROCEDURE**

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**CONCLUSION**

The applicant respectfully submits that all of the pending claims are in condition for allowance, and such action is earnestly solicited. The Examiner is invited to telephone the below-signed attorney at 612-373-6973 to discuss any questions which may remain with respect to the present application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

LEONARD FORBES ET AL.

By their Representatives,

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.  
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(612) 373-6973

Date 8 May 2002 By Robert E. Mates

Robert E. Mates  
Reg. No. 35,271



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Amy Moriarty

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A return postcard.  
 A Response under 37 CFR § 1.116 (5 Pages).

Please consider this a **PETITION FOR EXTENSION OF TIME** for sufficient number of months to enter these papers and please charge any additional required fees or credit overpayment to Deposit Account No. 19-0743.

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.  
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By: \_\_\_\_\_  
Atty: Robert E. Mates  
Reg. No. 35,271

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Name \_\_\_\_\_

*Amy Moriarty*

Signature \_\_\_\_\_

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